

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION — Utility or Design Patent Application

Direct all correspondence to: Customer Number: _____ OR Correspondence address below

Name

Anthony S. Fuccione

Address

155 OCEAN STREET

City

LYNN

State

MA

ZIP

01902

Country

USA

Telephone

(781) 595-7550

Fax

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR:

A petition has been filed for this unsigned inventor

Given Name

(first and middle [if any])

Anthony Stephen

Family Name

or Surname

Fuccione

Inventor's Signature

Anthony Stephen Fuccione

Date

12/31/03

Residence: City

LYNN

State

Massachusetts

Country

USA

Citizenship

USA

Mailing Address

155 OCEAN STREET

City

LYNN

State

MA

ZIP

01902

Country

*USA***NAME OF SECOND INVENTOR:**

A petition has been filed for this unsigned inventor

Given Name

(first and middle [if any])

Family Name

or Surname

Inventor's Signature

Date

Residence: City

State

Country

Citizenship

Mailing Address

City

State

ZIP

Country



Additional inventors or a legal representative are being named on the _____ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)**Title of Invention**

As the below named inventor(s), I/we declare that:

This declaration is directed to:

- The attached application, or
- Application No. _____, filed on _____,
- as amended on _____ (if applicable);

I/we believe that I/we am/are the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought;

I/we have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above;

I/we acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me/us to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.

All statements made herein of my/own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and may jeopardize the validity of the application or any patent issuing thereon.

FULL NAME OF INVENTOR(S)

Inventor one:



Signature: _____

Citizen of: _____

Inventor two: _____

Signature: _____

Citizen of: _____

Inventor three: _____

Signature: _____

Citizen of: _____

Inventor four: _____

Signature: _____

Citizen of: _____

 Additional inventors or a legal representative are being named on _____ additional form(s) attached hereto.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Confirmations states of DNA viewed electrically.

Conformational States of DNA

① Double helix
② "Bead on string"
③ Lamp brush
④ Chromosome

These structural features
All contain
Codes in Base Pairs. Every turn produces New interaction
Dynamics of the structural packing

STRUCTURAL & Functional Information

Histones

That the super-structure of the histone octamer from a reductionistic view follows octet rule

Conformational States of DNA

Confined
Liquid crystal
(L,C) physics

HUMAN ENDEAVORS

Chromatin Structure

Note: DNA is always coiled
coiled
or folded

1900-1950: Which proposed that long chains of positively charged protein molecules are surrounded by negatively charged nucleoproteins, which are linked in a linear arrangement. By doing so, it limited the sequence of the protein carried genetic information and that the nucleic acid was a supplementary substance. Her model was criticized, not for the idea that protein is the genetic substance, but for the relative orientation of the proteins and nucleotides.

1950-1970: Crick and Watson proposed the double helix model for DNA structure in 1953 and the idea of DNA as the genetic carrier was accepted by many. Researchers viewed histones as spacers that later decided they were structural components. The Pardon-Wilkins model featured a DNA superhelix uniformly coiled by protein.

1970: Kornberg proposed the current model of the nucleosome, featuring a core of DNA wrapped around a core of eight histones. The core contains two molecules each of the histones H2A, H2B, H3, and H4. Researchers now know that histone H1 binds to the DNA on the outside of the nucleosomes.

Source: Adapted from "Evolution: Chromatin Structure," originally published in *The Journal of NIH Research*, vol. 2, p. 96, April 1990. Illustration adapted by Elizabeth Morris-Dentey from original artwork by Sally Bussey.

1976: Finch and Kugler proposed that chromatin is condensed into a 300-Å fiber or coiled by a helical winding of the nucleosomal DNA. Others proposed a supercoil model for the 300-Å fiber, claiming that it consists of a linear aggregation of nucleosomes.

1978: Presently, researchers suggested that chromatin strands are organized into supercoiled loops, each containing 50,000 to 100,000 base pairs of DNA. The loops are anchored to a nuclear scaffold, which contains topoisomerase II, laminin, vimentin, actin, and other proteins. The conversion of DNA into supercoiled domains may help regulate gene expression and DNA replication.

Electrodynamic

① double helix (cationic coil)
② is a solenoid, polarity

The electrodynamics of the functional packaging of DNA shows (from 1-4) a decrease in the ability of DNA to mediate charged (H-Bonding) free energy yet an increase in structural (geometric stability). Increase "packing" decreases energy (soliton tension)

That there is a hierarchy of cell cycle controls is a biological ordered energy system. The order of the system is covalent linkages via dipole induced electrostatic interactions. DNA production and physical properties are expressed by ordered energy reactions due to the electrodynamic properties of DNA. A cell in metaphase shows mechanistically functions of a bioelectromagnetic field.